No HLA Association with the Early Development of a Single Basal Cell Carcinoma

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An association between HLA-DR 1 and the development of multiple basal cell carcinomas (BCCs) has been reported from North America [1], southern Europe [2] and southern Australia [3]. The largest study was carried out in Australia where it was found that the association was present in young patients but not in those near to or older than the average age at which skin cancer develops [3]. It was uncertain if HLA-DR 1 was associated with the development of BCC at an early age or if it was associated with early development of multiple BCCs. The HLA frequencies of young people with one BCC were determined to see if any association was present.

People under the age of 30 years were chosen because it is uncommon for a BCC to develop in normal people under this age in Melbourne. The prevalence of skin cancer in this age group has been estimated to be 0.03% based on a survey of skin cancer in Australia [4, 5]. The patients were selected at random from patients referred by Melbourne dermatologists. They had to be under the age of 30 years and have had a histologically confirmed BCC removed. They were unrelated, none was immunosuppressed and none had any of the inherited diseases associated with the early development of skin cancer. All had lived the majority of their lives in Melbourne which is located in the temperate zone of Australia. The method of HLA typing and the control group have been described elsewhere [3].

There were 29 patients in the study in the time allowed. The group consisted of 21 females and 8 males with an average age of 26.4 years (range 15-29). The preponderance of females reflects the changes which have occurred in Australia since the Second World

Table 1. HLA-DR frequencies in patients

War [6]. The HLA typing did not detect an association with any class 1 or class 2 antigen. The results of the HLA-DR typing are set out in table 1 and show that the frequency of HLA-DR 1 was not significantly different from that of the control population.

The results suggest that immunogenetic factors are important in the early development of multiple BCCs but not in the early development of a single BCC. While exposure to ultraviolet light is important in the genesis of skin cancer, there may be other factors involved in the genesis of multiple BCCs, as opposed to a single BCC, in otherwise normal people. The HLA system appears to be involved in the development of multiple skin cancers.

References

- Myskowski PL, Pollack MS, Schorr E, et al: Human leukocyte antigen associations in basal cell carcinoma. *J Am Acad Dermatol* 1985; 12: 997-1000.
- Cerimele D, Contu I, Carcassi C: HLA and multiple skin cancers. *Dermatologica* 1988; 176:176-181.
- Czarnecki D, Lewis A, Nicholson I, et al: HLA DR1 is not a sign of poor prognosis for the development of multiple basal cell carcinomas. *J Am Acad Dermatol* 1992;26:717-719.
- Czarnecki D, Zalcberg J, Meehan C, et al: A familial occurrence of multiple nonmelanoma skin cancer. *Cancer Genet Cytogenet* 1992;61: 1-5.
- Giles G, Marks R, Foley P: Incidence of non-melanocytic skin cancer treated in Australia. *BrMedJ* 1988;296:13-18.
- Czarnecki D, Meehan C, O'Brien T, et al: The changing face of skin cancer in Australia. *Int J Dermatol* 1991;30:715-717.